

FCC MAIL ROOM

Before the  
Federal Communications Commission  
Washington, D.C. 20554

2000 DEC 29 A 10:41

In the Matter of )  
)  
Replacement of Part 90 by Part 88 to Revise )  
the Private Land Mobile Radio Services and )  
Modify the Policies Governing Them )  
)  
And )  
)  
Examination of Exclusivity and Frequency )  
Assignment Policies of the Private Land )  
Mobile Services )

PR Docket 92-235 FILED

**FIFTH MEMORANDUM OPINION AND ORDER**

**Adopted:** December 14, 2000

**Released:** December 29, 2000

By the Commission:

**I. INTRODUCTION AND EXECUTIVE SUMMARY**

1. This *Fifth Memorandum Opinion and Order (Fifth MO&O)* addresses petitions for reconsideration or clarification and related pleadings regarding certain of our decisions in the *Second Memorandum Opinion and Order (Second MO&O)* in this proceeding.<sup>1</sup> In this *Fifth MO&O*, we adopt modified frequency coordination procedures for frequencies below 512 MHz that previously were designated for shared use with eligibles in the former Power, Petroleum, Railroad and Automobile Emergency Radio Services. We also affirm our decision that requests to use wideband (*i.e.*, 25 kHz) equipment on channels designated for low power will be handled as waiver requests. Further, we find it premature to adopt rules governing non-voice operation on 450 MHz channels designated for low power use. In addition, we clarify our decision in the *Second MO&O* regarding licensing of low power transmitters as mobiles. We also dismiss a petition seeking institution of a negotiated rule making or other proceeding to address low power use of 450 MHz land mobile frequencies. Finally, we reiterate the mechanisms that we have established for ensuring sufficient adjacent channel interference protection on frequencies below 512 MHz.

**II. BACKGROUND**

2. In connection with our "spectrum refarming" initiative, we consolidated twenty separate private land mobile radio (PLMR) services into two broad frequency pools, the Public Safety Pool and the Industrial/Business Pool. As part of this consolidation, we provided that generally any certified

<sup>1</sup> Replacement of Part 90 by Part 88 to Revise the Private Land Mobile Radio Services and Modify the Policies Governing Them and Examination of Exclusivity and Frequency Assignments Policies of the Private Land Mobile Services. PR Docket No. 92-235, *Second Memorandum Opinion and Order*, 14 FCC Rcd 8642 (1999) (*Second MO&O*).

frequency coordinator who previously had been responsible for coordinating applications filed in the former PLMR services that were consolidated into the Industrial/Business Pool could coordinate an Industrial/Business Pool application. However, if a frequency formerly had been designated exclusively for use by eligibles in the Power, Petroleum or Railroad Radio Services, it could be coordinated only by the associated certified frequency coordinator – the American Petroleum Institute (API), the United Telecom Council (UTC) or the Association of American Railroads (AAR).<sup>2</sup> We introduced this exclusive coordination provision out of recognition that railroad, power, and petroleum entities routinely use PLMR frequencies for critical public safety-related communications.<sup>3</sup>

3. API sought reconsideration of the new frequency coordination rules because they applied only to frequencies that, prior to consolidation, had been assigned to the Power, Petroleum or Railroad Radio Services on an exclusive basis. In this connection, API noted that most of the pre-consolidation frequencies that it had coordinated were frequencies that had been shared with other radio services rather than those exclusively designated for Petroleum Radio Service eligibles. Consequently, API argued, the new rules did not afford petroleum industry licensees sufficient interference protection. API suggested that the requisite interference protection could be provided if API coordinator concurrence were required whenever an applicant specified one of the previously shared frequencies for which the applicant's interference contour intersected the coverage contour of an existing petroleum industry licensee operating on that frequency.<sup>4</sup>

4. In response to API's reconsideration request, we adopted the *Second MO&O* to provide special frequency coordination provisions for previously shared frequencies as well as those that had been previously allocated to the Power, Petroleum, Railroad, and Automobile Emergency Radio Services on an exclusive basis. We declined to adopt API's contour overlap solution. Rather, we determined that frequencies assigned on a primary basis to any of the former Power, Petroleum and Railroad Services or shared, on a primary basis, prior to the *First Report and Order* in this proceeding, between one of these three services and another radio service must be coordinated by API, UTC or AAR, as appropriate.<sup>5</sup> We also made determinations regarding low power frequencies and the concurrence requirement for trunked operations in the *Second MO&O*.<sup>6</sup>

5. We received 7 petitions for reconsideration or clarification of the *Second MO&O* submitted by UTC, API, Dataradio COR, Ltd. (Dataradio), Blooston, Mordkofsky, Jackson and Dickens (Blooston), Forest Industries Telecommunications (FIT), MRFAC, Inc. (MRFAC), the Alarm Industry

---

<sup>2</sup> Replacement of Part 90 by Part 88 to Revise the Private Land Mobile Radio Services and Modify the Policies Governing Them and Examination of Exclusivity and Frequency Assignments Policies of the Private Land Mobile Services, PR Docket No. 92-235, *Second Report and Order*, 12 FCC Rcd 14307, 14330 (1997) (*Second R&O*).

<sup>3</sup> *See id.* at 14309.

<sup>4</sup> *See* API Petition for Reconsideration, filed May 9, 1997, at 3-7.

<sup>5</sup> *Second MO&O*, 14 FCC Rcd at 8647-8648. We applied comparable provisions to frequencies that formerly had been allocated on an exclusive basis to the Automobile Emergency Radio Service and made the Automobile Association of America the exclusive coordinator for those frequencies. *See id.* at 8650.

<sup>6</sup> *See id.* at 8647-8648, 8657-8660, 8661.

Communications Committee (AICC) and Ericsson, Inc. (Ericsson).<sup>7</sup> In addition, MRFAC and FIT sought and received a stay of the rule amendments that made UTC, API and AAR the mandatory coordinators for frequencies that, pre-consolidation, had been shared between Power, Petroleum and Railroad licensees and licensees in other radio services.<sup>8</sup> Subsequently, the Land Mobile Communications Council (LMCC) filed supplemental comments<sup>9</sup> that purport to be an industry consensus concerning frequency coordination for previously shared frequencies.<sup>10</sup>

### III. DISCUSSION

#### A. Coordination Issues

6. Based on our review and analysis of the record before us, we conclude that certain rules adopted in the *Second MO&O* should be modified in order to promote the effective and efficient utilization of the spectrum below 512 MHz. We are persuaded that the proposals outlined in the LMCC Supplemental Comments will facilitate effective sharing of the frequencies in the Industrial/Business Pool without adversely affecting safety-related communications. Thus, we are adopting the industry consensus, with some modifications, as discussed in further detail below.

7. Under the modified frequency coordination rules we adopt today, any applicant in the Industrial/Business Pool may submit its application to the coordinator of its choice for any channel that previously was allotted on a shared basis with eligibles in the former Power, Petroleum, Railroad, and Automobile Emergency Radio Services.<sup>11</sup> However, as a threshold matter, the selected coordinator must determine whether the interference contour of a proposed facility overlaps the service contour(s) of any incumbent licensee operating on a frequency that previously was shared by eligibles in the referenced industry-specific former radio services.<sup>12</sup> If there is contour overlap, then the coordinator may not

---

<sup>7</sup> UTC, API and AAR filed a Joint Opposition to the Petitions for Reconsideration filed by MRFAC and FIT. MRFAC filed a Partial Opposition to the Petition for Clarification filed by API, Comments on the Petition for Reconsideration filed by UTC and a Reply to Joint Opposition of API, UTC and AAR to Petitions for Partial Reconsideration filed by MRFAC, Inc. and FIT. API filed a Reply to Partial Opposition to Petition for Clarification. FIT filed a Reply to Joint Opposition to Petition for Partial Reconsideration. Blooston filed an Addendum to Petition for Clarification and/or Reconsideration.

<sup>8</sup> See Replacement of Part 90 by Part 88 to Revise the Private Land Mobile Radio Services and Modify the Policies Governing Them and Examination of Exclusivity and Frequency Assignments Policies of the Private Land Mobile Services, PR Docket No. 92-235, *Fourth Memorandum Opinion and Order*, 15 FCC Rcd 7051 (1999).

<sup>9</sup> Supplemental Comments of the Land Mobile Communications Council on Petitions for Reconsideration of the Second Memorandum Opinion and Order filed April 28, 2000 (LMCC Supplemental Comments).

<sup>10</sup> *See id.* at 3. Therein it is noted that the LMCC member organizations, including MRFAC and FIT, but excepting the American Mobile Telecommunications Association, support the filing of the supplemental comments. *Id.* Based on the LMCC's representation, we have not addressed the substantive arguments raised in the filings of its members concerning the coordination of frequencies previously shared with the former Power, Petroleum, and Railroad Radio Services to the extent that those parties' filings conflict with the consensus position.

<sup>11</sup> *Id.*

<sup>12</sup> *Id.*

forward the application to the FCC unless that coordinator obtains the written concurrence of the industry-specific coordinator(s) or the written concurrence of the affected licensee(s). The method of contour analysis to be used in determining contour overlap<sup>13</sup> is left to the discretion of the certified frequency coordinators. However, we require that all certified frequency coordinators reach consensus on a common analytical method and notify the Wireless Telecommunications Bureau of such consensus within six months of the release date of this *Fifth MO&O*. We also require that adjacent channel interference be taken into account when determining whether concurrence is required, and similar to our approach of the method of contour analysis, we leave the choice of adjacent channel service/interference contour values to the discretion of the certified frequency coordinators. In addition, we require that the certified frequency coordinators achieve consensus on the adjacent channel interference standards to be used and notify the Wireless Telecommunications Bureau of such consensus within six months of the release date of this *Fifth MO&O*.<sup>14</sup>

8. In addition, we require that whenever a request for concurrence is made, the person making the request must advise the recipient of the request that it must be acted upon within 20 days of receipt. To facilitate the concurrence process, we encourage coordinators to employ electronic exchange of messages where feasible. If a request for concurrence is denied, the reasons underlying the denial must be provided in writing with sufficient documentation to support a determination that the frequency at issue may not be shared without a demonstrable material adverse effect on specific safety-related communications. We thus decline to provide API's requested "clarification" that contour overlap, alone, is a sufficient basis to refuse concurrence.<sup>15</sup> While we recognize that differences regarding concurrence may arise, we nonetheless expect that such issues will be resolved cooperatively by the relevant coordinators, *e.g.*, by using engineering solutions to eliminate or minimize harmful interference. However, in the rare instance in which such differences are not cooperatively resolved, the matter may be referred to the Wireless Telecommunications Bureau.

#### **B. Wideband Waivers**

9. In the *Second MO&O*, we stated that we would entertain waiver requests from applicants for low power channels proposing to use wideband (25 kHz) equipment "where an applicant makes a sufficient showing, including, but not limited to, the use of spectrally efficient equipment."<sup>16</sup> We also

---

<sup>13</sup> For the purpose of this contour analysis, the relevant co-channel contour values are 37 dBu and 39 dBu for the VHF and UHF service contours, respectively; and 19 dBu and 21 dBu for the VHF and UHF interference contours, respectively. *Cf.* 47 C.F.R. § 90.187.

<sup>14</sup> Note that the rules adopted in this *Fifth MO&O* do not modify the procedures specified in the *Second MO&O* for coordination of frequencies that, prior to radio service consolidation, were assigned to the Power Radio Service, the Petroleum Radio Service, the Railroad Radio Service and the Automobile Emergency Radio Service on an exclusive basis. *Cf.* LMCC Supplemental Comments at 3 n.3. Note, also, that the requirement for submission of consensus standards for contour overlap prediction and adjacent channel interference assessment within six months of the release date of the instant *Fifth MO&O* does not act to stay processing of coordination requests in the interim. Until the consensus document is received and accepted by the Wireless Telecommunications Bureau, coordinators should employ contour prediction and adjacent channel interference standards that, in their best judgment, reflect the conditions that would exist in practice were a proposed station activated. *See also* para. 14 *infra*.

<sup>15</sup> *See* Petition for Clarification of the American Petroleum Institute at 8.

<sup>16</sup> *Second MO&O*, 14 FCC Rcd at 8659-60.

determined that if the waiver were granted, the applicant would be given primary status with respect to co-channel and adjacent channel licensees.<sup>17</sup> MRFAC contends that we should delegate to frequency coordinators the authority to judge the sufficiency of the showings submitted by such applicants and that no waiver should be required. MRFAC also states that its position is consistent with the position taken by the LMCC in a letter to the Chief of the Wireless Telecommunications Bureau dated January 30, 1998.<sup>18</sup>

10. After reviewing the record on this matter, including the aforementioned LMCC 1998 recommendations and MRFAC's arguments in its reconsideration petition, we remain convinced that the use of wideband equipment on low power channels is most appropriately handled through the waiver process. In this regard, we note that in evaluating a request to use 25 kHz equipment, we may take into account public interest factors other than an applicant's use of spectrally efficient equipment in reaching a decision.<sup>19</sup> Consistent with our approach for other types of waiver requests, we do not believe that frequency coordinators should be given the authority to determine the sufficiency of applicants' proposals to use 25 kHz bandwidth equipment. Accordingly, we decline to adopt MRFAC's recommendation.

### C. Non-Voice Channels

11. As noted in the *Second MO&O*, the LMCC submitted a plan (the LMCC Low Power Plan) in which it recommended that 104 channel pairs in the 450-470 MHz band be set aside for low power operations.<sup>20</sup> In the LMCC Low Power Plan, 10 channel pairs in the Industrial/Business Pool are set aside as "Non-Voice, Coordinated Low Power Pool."<sup>21</sup> Although these channels are designated for non-voice use, LMCC proposed that they could be shared on a secondary, coordinated basis with voice users. Dataradio avers that such shared use of voice and non-voice channels could have catastrophic results<sup>22</sup> and that interference avoidance would be costly and inefficient for users employing non-voice

---

<sup>17</sup> *Id.*

<sup>18</sup> See MRFAC Petition for Partial Reconsideration at 4.

<sup>19</sup> Waiver proponents must show that the underlying purpose of a rule would not be served or would be frustrated if applied to the proponent's case and that a grant of the requested waiver would be in the public interest; or that in view of unique or unusual factual circumstances, application of a rule would be inequitable, unduly burdensome or contrary to the public interest, or that the waiver proponent has no reasonable alternative. See 47 C.F.R. § 1.925(b)(3).

<sup>20</sup> See *Second MO&O*, 14 FCC Rcd at 8658. The LMCC Low Power Plan was accepted by the Commission on June 29, 2000. See Wireless Communications Bureau Accepts LMCC Low Power Plan for Part 90 450-470 MHz Band, *Public Notice*, 15 FCC Rcd 11598 (WTB 2000) (*Low Power Public Notice*).

<sup>21</sup> See Dataradio Petition for Reconsideration and/or Clarification, Attachment 1, Appendix B.

<sup>22</sup> For example, that interference to a data channel from a secondary voice transmission could result in a remote oil tank being overfilled and rupturing. See Dataradio Petition for Reconsideration and/or Clarification at 11-12.

transmissions.<sup>23</sup> It therefore requests that we adopt a rule barring even secondary voice transmissions on the channels that LMCC has recommended for non-voice use.<sup>24</sup>

12. We need not reach the arguments advanced by Dataradio because the Commission has not adopted that portion of the LMCC Low Power Plan that deals with the proposed Non-Voice Coordinated Low Power Pool.<sup>25</sup> Accordingly, the Dataradio arguments are beyond the scope of the decisions made in the *Second MO&O* and we therefore dismiss the Dataradio petition.

#### D. Licensing of Low Power Transmitters as Mobiles

13. In the *Second MO&O*, the Commission deleted the requirement that stations on designated fixed low power channels be licensed as mobile stations.<sup>26</sup> AICC and Blooston seek clarification of this action out of concern that, as a consequence, all low power stations must now be licensed as fixed stations on a site-specific basis with geographical coordinates furnished for each transmitter.<sup>27</sup> However, we disclaim any intention of requiring low power licensees to provide geographical coordinates for all fixed transmitters in a system. In the *First Memorandum Opinion and Order* we noted, with respect to low power stations, that "situations exist where it is neither feasible nor desirable for a licensee to furnish coordinates of all transmitters in their system."<sup>28</sup> Accordingly, the rules allow such fixed low power stations to be licensed on an area basis whereby a licensee need only specify the coordinates of the center of an operating area and a radius extending from that center that defines a circle corresponding to the licensee's service area.<sup>29</sup>

#### E. Adjacent Channel Interference Protection

14. UTC claims that we have failed to provide "coordination protection from adjacent channel interference to exclusive or shared channels."<sup>30</sup> In addition, UTC restates allegations it made previously,

---

<sup>23</sup> *Id.* at 12.

<sup>24</sup> *See id.* at 10.

<sup>25</sup> *See Low Power Public Notice*, n. 20 *supra* which makes no reference to non-voice channels. We note that the LMCC has submitted a petition for rule making regarding the LMCC Low Power Plan. Petition for Rule Making of the Land Mobile Communications Council, filed September 11, 2000. Thus, we conclude that Dataradio's concerns would be most appropriately raised and considered in that context.

<sup>26</sup> *See Second MO&O*, 14 FCC Rcd at 8659.

<sup>27</sup> *See* AICC Petition for Clarification and/or Reconsideration (AICC Petition) at 3 *citing Second MO&O*, 14 FCC Rcd at 8659; Blooston Petition for Clarification and/or Reconsideration at 2-3. *See also ex parte* communication of Hexagram, Inc., May 4, 2000, expressing views consistent with the Blooston and AICC petitions.

<sup>28</sup> Replacement of Part 90 by Part 88 to Revise the Private Land Mobile Radio Services and Modify the Policies Governing Them and Examination of Exclusivity and Frequency Assignment Policies if the Private Land Mobile Radio Services, PR Docket No. 92-235, *Memorandum Opinion and Order*, 11 FCC Rcd 16676, 17706 (1996).

<sup>29</sup> *See* 47 CFR 90.267(a)(4): "The area of normal day-to-day operations will be described in the application in terms of maximum distance from a geographical center (latitude and longitude)."

<sup>30</sup> UTC Petition for Reconsideration at 4. UTC defines an "exclusive" channel as one that was assigned on a primary basis to the Power, Petroleum, Railroad or Automobile Emergency services prior to consolidation. *See id.* (continued....)

in the context of a request for a licensing freeze,<sup>31</sup> to the effect that stations coordinated on adjacent channels have caused interference to safety-related communications of utility and pipeline licensees.<sup>32</sup> UTC does acknowledge that, in the Refarming *Second MO&O*,<sup>33</sup> we expanded the degree of coordination protection afforded to utility licensees and others. Yet, it argues that, notwithstanding that expanded protection, adjacent channel interference “remains a threat to the safe and reliable operation of utilities and pipelines.”<sup>34</sup> UTC supports its claim by reference to a filing, made in the context of another proceeding, in which it referenced eight alleged instances of adjacent channel interference to utility operations.<sup>35</sup> The adjacent channel interference arises, UTC contends, because signals from stations operating on channels spaced 15 kHz or less from utility stations operating with wideband (25 kHz) equipment fall within the passband of the wideband equipment receivers.<sup>36</sup> Without discussing what technical standards might be appropriate – other than the outright banning of adjacent channel operations – UTC “urges the FCC to proactively protect against adjacent channel interference.”<sup>37</sup>

15. We disagree with UTC’s claim that we have failed to provide protection against adjacent channel interference. To the contrary, we reiterated in the *Second MO&O* that we expect frequency coordinators to establish consensus standards for assessment of adjacent channel interference. Specifically, we recited our “expectation that frequency coordinators will cooperate in the application of appropriate adjacent channel signal to interference ratios when coordinating adjacent channel operations,”<sup>38</sup> thereby affording the requisite coordination protection. Moreover, in this *Fifth MO&O*, we require that adjacent channel interference be taken into account when frequency coordinators determine whether concurrence of another coordinator may be required before a given coordination can be effected.<sup>39</sup> Also, we are requiring the frequency coordinators to report to us, their consensus technical standards to be applied when potential adjacent channel interference is evaluated.<sup>40</sup>

(Continued from previous page) \_\_\_\_\_

at 3. To the extent that UTC’s chosen nomenclature implies that, under the current coordination regime, power, petroleum, railroad or automobile emergency service licensees have exclusive use of their former channels, the implication is an incorrect one: the channels are part of the Industrial/Business Pool and thus are considered shared spectrum. *See* 47 C.F.R. § 90.173(a). *See also* para. 6 *supra*.

<sup>31</sup> Emergency Request for Limited Licensing Freeze, filed jointly by UTC and API, June 26, 1998 (Freeze Request)

<sup>32</sup> UTC Petition for Reconsideration at 2-4.

<sup>33</sup> *Id.* at 3, citing *Second MO&O*, 14 FCC Rcd at 8647.

<sup>34</sup> UTC Petition for Reconsideration at 4.

<sup>35</sup> *Id.* at 4-5, citing UTC Comments on Critical Infrastructure Industry Petition for Rulemaking, RM-9405, filed December 23, 1998.

<sup>36</sup> *Id.* at 6.

<sup>37</sup> *Id.* at 5.

<sup>38</sup> *Second MO&O*, 14 FCC Rcd at 8649.

<sup>39</sup> *See* para. 7 *supra*.

<sup>40</sup> *Id.*

16. Given our continuing belief that the frequency coordination process is a sufficient vehicle to protect against harmful adjacent channel interference, we declined the UTC and API *Freeze Request*, finding such a freeze unwarranted absent a demonstration that there is a “serious problem that cannot be resolved under our current rules and procedures.”<sup>41</sup> We still do not believe that the eight instances of interference cited by UTC then,<sup>42</sup> or the arguments proffered in its petition now, are a sufficient basis to alter our conclusion that our coordination procedures, as revised in this *Fifth Memorandum Opinion and Order*, are sufficient to protect licensees from harmful interference. We note here that we reached a similar conclusion when we denied UTC’s request for a new public safety radio pool – a request that UTC also premised on interference claims.<sup>43</sup>

17. Finally, we wish to address UTC’s concerns regarding the interference susceptibility of wideband receivers. We urge frequency coordinators to avoid coordinations that would place interfering signals within the passband of such receivers whenever possible. However, the PLMR community should recognize that the gradual transition from 25 kHz to 12.5 kHz and, eventually, to 6.25 kHz operation<sup>44</sup> may render some wideband systems increasingly obsolescent and susceptible to interference, necessitating eventual replacement of 25 kHz equipment with more modern and selective narrowband equipment.

#### F. Hewlett Packard Petition

18. On May 19, 1997, the Hewlett Packard Corporation filed a petition requesting us to initiate a negotiated rule making or other process to develop standards for the allocation of low power channels in the 450 MHz – 470 MHz band.<sup>45</sup> Hewlett Packard’s request was grounded on its concern that high power operations on former low power offset channels would create harmful interference to medical telemetry equipment used to transmit physical parameters, *e.g.*, from ambulatory cardiac patients to nursing stations.<sup>46</sup> At the time the *Second MO&O* was issued, we stated that a Commission study on the

---

<sup>41</sup> *Second MO&O*, 14 FCC Rcd at 8649.

<sup>42</sup> We note that the instances of interference cited by UTC appear to describe co-channel rather than adjacent channel interference. The descriptions refer to “interference on the same channel” or words of identical import. Indeed, in discussing these interference cases, UTC characterizes them as “instances of harmful interference from industrial mobile users coordinated on the same frequencies as emergency mobile dispatch units.” UTC RM-9405 Comments at 7, emphasis supplied.

<sup>43</sup> See Implementation of Sections 309(j) and 337 of the Communications Act of 1934 as Amended; Promotion of Spectrum Efficient Technologies on Certain Part 90 Frequencies; Establishment of Public Service Radio Pool in the Private Mobile Frequencies Below 8000 MHz; Petition for Rule Making of the American Mobile Telecommunications Association, WT Docket No. 99-87, RM-9332, RM-9405, RM-9705, *Report and Order and Further Notice of Proposed Rule Making*, FCC 00-403 (November 20, 2000) at para.100. [“We agree that the number of instances of actual electrical interference do not appear so large as to justify the inefficiencies that could arise from creating a third pool.”]

<sup>44</sup> See 47 C.F.R. § 90.203(j).

<sup>45</sup> See Hewlett Packard Petition for Reconsideration and Clarification filed May 17, 1997, at 5-6.

<sup>46</sup> See *id.* at 2. See also *Second MO&O*, 14 FCC Rcd at 8660. As a result of a prior request by Hewlett Packard, a freeze on the acceptance of high power applications on the 12.5 kHz offset channels was imposed on August 11, 1995. See Freeze on the Filing of High Power Applications for 12.5 kHz Offset Channels in the 450-470 MHz Band, PR Docket 92-235, *Public Notice*, 10 FCC Rcd 1995 (WTB 1995).

medical telemetry interference issue was underway, but not yet complete, and therefore that action on the issue then would be premature.<sup>47</sup> Accordingly, we held the Hewlett Packard petition in abeyance pending completion of the studies.<sup>48</sup> Since that time, we have established a new Wireless Medical Telemetry Service (WMTS) where we allocated 14 MHz of spectrum for medical telemetry use,<sup>49</sup> the LMCC Low Power Plan has been accepted<sup>50</sup> and the freeze on high power operations in the 450-460 MHz band segment has been lifted effective January 29, 2001.<sup>51</sup> Because we have found the LMCC Low Power Plan acceptable, and allocated other spectrum for medical telemetry, we believe no useful purpose would be served in revisiting the low power issue by initiating a negotiated rule making or other process as Hewlett Packard requests with respect to the PLMR spectrum below 512 MHz. Accordingly, we deny the Hewlett Packard petition.

#### G. Rules Affecting Trunked Operation

19. Ericsson requests that we revise or delete the second sentence of Section 90.187(b)(2)(ii) of the rules in effect at the time it submitted its petition "to more accurately reflect the exception analysis for determining which existing licensees must concur with proposals for centralized trunking below 512 MHz."<sup>52</sup> We need not reach the issue raised by Ericsson. In the *Third Memorandum Opinion and Order* in this proceeding,<sup>53</sup> which revised the procedures applicable to trunking applications, the Commission deleted the second sentence of Section 90.187(b)(2)(ii) rendering Ericsson's request moot. We therefore dismiss the Ericsson reconsideration petition as moot.

### IV. PROCEDURAL MATTERS

#### A. Regulatory Flexibility Act

20. Appendix A contains a Supplemental Final Regulatory Flexibility Analysis with respect to this *Fifth Memorandum Opinion and Order*.

---

<sup>47</sup> See *Second MO&O*, 14 FCC Rcd at 8660.

<sup>48</sup> *Id.*

<sup>49</sup> Amendment of Parts 2 and 95 of the Commission's Rules to Create a Wireless Medical Telemetry Service, ET Docket 99-255, PR Docket 92-235, *Report and Order*, 15 FCC Rcd 11206 (2000).

<sup>50</sup> See *Low Power Public Notice*, 15 FCC Rcd at 11598.

<sup>51</sup> See Freeze on the Filing of High Power Applications for 12.5 kHz Offset Channels in the 450-460 MHz Band to be Lifted January 29, 2001, *Public Notice*, 15 FCC Rcd 9996 (2000). The freeze was lifted only with respect to the 450-460 MHz band segment. The freeze on the 460-470 MHz band segment will be lifted at a later date. *Id.* at 9997 n.6.

<sup>52</sup> Ericsson Petition for Reconsideration at 1-2.

<sup>53</sup> Replacement of Part 90 by Part 88 to Revise the Private Land Mobile Radio Services and Modify the Policies Governing Them and Examination of Exclusivity and Frequency Assignments Policies of the Private Land Mobile Services, PR Docket No. 92-235, *Third Memorandum Opinion and Order*, WT Docket 92-235, 14 FCC Rcd 10922 (1999).

**B. Paperwork Reduction Act Analysis**

21. This *Fifth Memorandum Opinion and Order* contains either a new or modified information collection. The Commission, as part of its continuing effort to reduce paperwork burdens, invites the general public to comment on the information collection contained in this *Fifth Memorandum Opinion and Order* as required by the Paperwork Reduction Act of 1995, Pub. L. No. 104-13. Public and agency comments are due 60 days from date of publication of this *Fifth Memorandum Opinion and Order* in the Federal Register. Comments should address: (a) whether the new or modified collection of information is necessary for the proper performance of the functions of the Commission, including whether the information shall have practical utility; (b) the accuracy of the Commission's burden estimates; (c) ways to enhance the quality, utility, and clarity of the information collected; and (d) ways to minimize the burden of the collection of information on the respondents, including the use of automated collection techniques or other forms of information technology. These comments should be submitted to Judy Boley, Federal Communications Commission, Room 1C-804, 445 12<sup>th</sup> Street, SW, Washington, D.C. 20554, or via the Internet to [jboley@fcc.gov](mailto:jboley@fcc.gov). Furthermore, a copy of any such comments should be submitted to Timothy Fain, OMB Desk Officer, 10236 NEOB, 725 - 17th Street, N.W., Washington, D.C. 20503 or via the Internet at [fain\\_t@al.eop.gov](mailto:fain_t@al.eop.gov).

**C. Ordering Clauses**

22. In view of the foregoing and pursuant to the authority conferred by Sections 4(i), 303(r) and 405 of the Communications Act of 1934, as amended, 47 USC §§ 154(i), 303(r) and 405, and pursuant to Section 1.429(i) of the Commission's rules, 47 CFR § 1.429(i):

23. **IT IS ORDERED** that the UTC Petition for Reconsideration **IS DENIED**; that the Petition for Clarification of the American Petroleum Institute **IS DENIED**; and that the Petition for Reconsideration and/or Clarification of Dataradio **IS DISMISSED**; and that that the Ericsson Petition for Reconsideration **IS DISMISSED** as moot.

24. **IT IS FURTHER ORDERED** that the Blooston Petition for Clarification and/or Reconsideration **IS GRANTED**; and that the AICC Petition for Clarification and/or Reconsideration **IS GRANTED**.

25. **IT IS FURTHER ORDERED** that the Hewlett Packard Petition for Reconsideration and Clarification **IS DENIED**.

26. **IT IS FURTHER ORDERED** that that the FIT Petition for Partial Reconsideration **IS GRANTED** to the extent stated herein and **DENIED** in all other respects; that the MRFAC Petition for Partial Reconsideration **IS GRANTED** to the extent stated herein and **DENIED** in all other respects. **IT IS FURTHER ORDERED** that Sections 90.35 and 90.175 of the Commission's rules **ARE AMENDED** as set forth in Appendix B, effective [60 days after publication of this *Fifth Memorandum Opinion and Order* in the Federal Register].

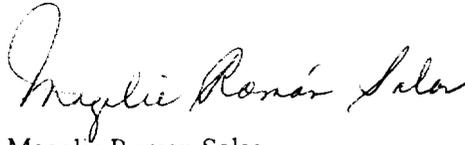
27. **IT IS FURTHER ORDERED** that the stay imposed by the *Fourth MO&O* is hereby **VACATED**, effective [60 days after publication of this *Fifth Memorandum Opinion and Order* in the **Federal Register**].

28. **IT IS FUTURE ORDERED** that this proceeding **IS TERMINATED**.

D. **Contact for Information**

29. For further information contact Michael J. Wilhelm of the Wireless Telecommunications Bureau, Public Safety and Private Wireless Division, at 202.418.0860 or by e-mail to [mwilhelm@fcc.gov](mailto:mwilhelm@fcc.gov).

**FEDERAL COMMUNICATIONS COMMISSION**



Magalie Roman Salas  
Secretary

## APPENDIX A

## Supplemental Final Regulatory Flexibility Analysis

1. As required by the Regulatory Flexibility Act (RFA), *see* 5 U.S.C. § 603, Initial Regulatory Flexibility Analyses (IRFA) were incorporated in the *Notice of Proposed Rule Making* and the *Further Notice of Proposed Rule Making* in PR Docket 92-235.<sup>54</sup> The Commission sought written public comment on the rule making proposals in the *Refarming Notice* and *Further Notice*, including on the respective IRFAs. This present Supplemental Regulatory Flexibility Analysis (Supplemental FRFA) in this *Fifth Memorandum Opinion and Order (Fifth MO&O)* conforms to the RFA.<sup>55</sup>

**I. Need For, and Objectives of, the *Fifth MO&O***

2. Our objective is to increase spectrum efficiency and facilitate the introduction of advanced technologies into the 150-174 MHz, 421-430 MHz, 450-470 MHz, and 470-512 MHz private land mobile radio (PLMR) bands. The *Report and Order* in this proceeding modified the Commission's rules to resolve many of the technical issues which inhibited the use of spectrally efficient technologies in these frequency bands. It also stated the Commission's intent to consolidate the twenty existing radio service pools. The *Further Notice* in this proceeding proposed several methods of introducing market based incentives into the PLMR bands, including exclusivity. In the *Second R&O*, the Commission consolidated the radio service frequency pools and addressed related issues such as frequency coordination, trunking, and low power frequencies. The *Second MO&O* addressed petitions for reconsideration and clarification received in response to the *Second R&O*. The *Third MO&O* established rules for trunking and terminated the exclusivity portion of the proceeding. The *Fourth MO&O* stayed the effect of the new coordination rules. This *Fifth MO&O* addresses petitions for reconsideration or clarification of the *Second MO&O* and enables new coordination rules.

3. The Commission finds that the potential benefits to the PLMR community from the promulgation of rules for this purpose exceed any negative effects that may result. Thus, the Commission

---

<sup>54</sup>Replacement of Part 90 by Part 88 to Revise the Private Land Mobile Radio Services and Modify the Policies Governing Them, PR Docket 92-235, *Notice of Proposed Rule Making*, 7 FCC Rcd 8105, 8133 (1992) (*Refarming Notice*). Replacement of Part 90 by Part 88 to Revise the Private Land Mobile Radio Services and Modify the Policies Governing Them and Examination of Exclusivity and Frequency Assignments Policies of the Private Land Mobile Radio Services, PR Docket No. 92-235, *Report and Order and Further Notice of Proposed Rule Making*, 10 FCC Rcd 10076, 10177 (1995) (*Report and Order or Further Notice*). A Final Regulatory Flexibility Analysis was provided in the first *Memorandum Opinion and Order*, Replacement of Part 90 by Part 88 to Revise the Private Land Mobile Radio Services and Modify the Policies Governing Them, PR Docket 92-235, *Memorandum Opinion and Order*, 11 FCC Rcd. 17676, 17718 (1996). An additional Final Regulatory Flexibility Analysis was furnished in connection with the *Second Report and Order*, Replacement of Part 90 by Part 88 to Revise the Private Land Mobile Radio Services and Modify the Policies Governing Them, PR Docket 92-235, *Second Report and Order*, 12 FCC Rcd 14307, 14353 (1997). A Supplemental Final Regulatory Flexibility was provided in the *Second Memorandum Opinion and Order*, Replacement of Part 90 by Part 88 to Revise the Private Land Mobile Radio Services and Modify the Policies Governing Them, PR Docket 92-235, *Second Memorandum Opinion and Order*, 14 FCC Rcd. 8642, 8673 (1999).

<sup>55</sup>*See* 5 U.S.C. § 603. The RFA, *see* 5 U.S.C. § 601 *et seq.*, has been amended by the Contract With America Advancement Act of 1996, Pub. L. No. 104-121, 110 Stat. 847 (1996) (CWAAA). Title II of the CWAAA is The Small Business Regulatory Enforcement Fairness Act of 1996 (SBREFA).

concludes that the public interest is served by modifying our rules.

## II. Summary of Significant Issues Raised by the Public in Response to the Previous Final Regulatory Flexibility Analyses

4. No reconsideration petitions were submitted in direct response to the previous FRFAs. The Commission has, however, reviewed general comments that may impact small businesses. Much of the impact on small businesses arises from the central decision in this proceeding -- determining the number of frequency pools and the eligibility criteria for each pool. This affects small businesses in the following way. A smaller number of pools provides a greater number of frequencies available for small businesses that use PLMR systems to meet their coordination needs. Additionally, by creating fewer pools, frequency coordinators will now be subject to competition. Thus, small businesses that use PLMR systems can expect to pay lower prices for frequency coordination while receiving equivalent or better service.

## III. Description and Estimate of the Number of Small Entities Subject to Which the Rules Apply

5. The RFA directs agencies to provide a description of and, where feasible, an estimate of the number of small entities that may be affected by the rules adopted. The RFA generally defines the term "small entity" as having the same meaning as the terms "small business," "small organization," and "small governmental jurisdiction."<sup>56</sup> In addition, the term "small business" has the same meaning as the term "small business concern" under the Small Business Act.<sup>57</sup> A small business concern is one which: (1) is independently owned and operated; (2) is not dominant in its field of operation; and (3) satisfies any additional criteria established by the Small Business Administration (SBA).<sup>58</sup> A small organization is generally "any not-for-profit enterprise which is independently owned and operated and is not dominant in its field."<sup>59</sup> Nationwide, as of 1992, there were approximately 275,801 small organizations.<sup>60</sup> "Small governmental jurisdiction" generally means "governments of cities, counties, towns, townships, villages, school districts, or special districts, with a population of less than 50,000."<sup>61</sup> As of 1992, there were approximately 85,006 such jurisdictions in the United States.<sup>62</sup> This number includes 38,978 counties, cities and towns; of these, 37,566, or 96 percent, have populations of fewer than 50,000.<sup>63</sup> The Census Bureau

---

<sup>56</sup>See 5 U.S.C. § 601(6).

<sup>57</sup>5 U.S.C. § 601(3) (incorporating by reference the definition of "small business concern" in 15 U.S.C. § 632). Pursuant to the RFA, the statutory definition of a small business applies "unless an agency, after consultation with the Office of Advocacy of the Small Business Administration and after opportunity for public comment, establishes one or more definitions of such term which are appropriate to the activities of the agency and publishes such definition(s) in the Federal Register." 5 U.S.C. § 601(3).

<sup>58</sup>Small Business Act, 5 U.S.C. § 632 (1996).

<sup>59</sup>5 U.S.C. § 601(4).

<sup>60</sup>1992 Economic Census, U.S. Bureau of the Census, Table 6 (special tabulation of data under contract to the Office of Advocacy of the Small Business Administration).

<sup>61</sup>5 U.S.C. § 601(5).

<sup>62</sup>U.S. Dept. of Commerce, Bureau of the Census, "1992 Census of Governments."

<sup>63</sup>*Id.*

estimates that this ratio is approximately accurate for all governmental entities. Thus, of the 85,006 governmental entities, the Commission estimates that 81,600 (91 percent) are small entities.

#### *Estimates for PLMR Licensees*

6. Private land mobile radio systems serve an essential role in a vast range of industrial, business, land transportation, and public safety activities. These radios are used by companies of all sizes operating in all U.S. business categories. Because of the vast array of PLMR users, the Commission has not developed, nor would it be possible to develop, a definition of small entities specifically applicable to PLMR users. For the purpose of determining whether a licensee is a small business as defined by the Small Business Administration (SBA), each licensee would need to be evaluated within its own business area. The Commission's fiscal year 1994 annual report indicates that, at the end of fiscal year 1994, there were 1,101,711 licensees operating 12,882,623 transmitters in the PLMR bands below 512 MHz.<sup>64</sup> Further, because any entity engaged in a commercial activity is eligible to hold a PLMR license, these rules could potentially impact every small business in the U.S.

#### *Estimates for Frequency Coordinators*

7. Neither the Commission nor the SBA have developed a definition of small entities specifically applicable to spectrum frequency coordinators. Therefore, the Commission concluded that the closest applicable definition under SBA rules is Business Associations (SIC 8611).<sup>65</sup> The SBA defines a small business association as an entity with \$5.0 million or less in annual receipts. There are 18 entities certified to perform frequency coordination functions under Part 90 of our Rules. However, the Commission is unable to ascertain how many of these frequency coordinators are classified as small entities under the SBA definition. The Census Bureau indicates that 97% of business associations have annual receipts of \$4.999 million or less and would be classified as small entities. The Census Bureau category is very broad, and does not include specific figures for firms that are engaged in the frequency coordination. Therefore, for the purposes of this Supplemental FRFA, the Commission estimates that almost all of the 18 spectrum frequency coordinators are small as defined by the SBA.

#### **IV. Description of Projected Reporting, Recordkeeping, and Other Compliance Requirements of the Rules**

This *Fifth Memorandum Opinion and Order* requires frequency coordinators to arrive at consensus standards for co-channel and adjacent channel interference and to report these standards to the Commission. This represents a one-time effort on the part of the frequency coordinators. The Commission believes that participation in the consensus process will be highly variable from one coordinator to another. However, on the average, the Commission anticipates that activities associated with reaching consensus and the preparation of the requisite report will occupy 40 hours of time per coordinator, of which there are 19. Additionally, if the interference contour of a proposed station would overlap the service contour of an existing station, the applicant for the proposed station – or the associated frequency coordinator – must obtain written concurrence from the frequency coordinator associated with the existing station, or from the station licensee itself. It is estimated that no more than 1 hour of effort would be required to request and receive such concurrence. The number of such applicants

---

<sup>64</sup>See Federal Communications Commission, 60th Annual Report, Fiscal Year 1994 at 120-121.

<sup>65</sup>See *Second R&O* at 14355.

or licensees that may be required to request or grant such concurrence depends on future events and thus is difficult of estimation. However, 3800 such applicants or licensees may be affected..

**V. Steps Taken to Minimize Significant Economic Impact on Small Entities and Significant Alternatives Considered**

8. The Commission, in this *Fifth MO&O*, has considered petitions for reconsideration and clarification regarding its *Second R&O* in PR Docket No. 92-235, which consolidated the PLMR radio services below 512 MHz and, *inter alia*, made provisions regarding frequency coordination in the Industrial/Business Pool. In doing so, the Commission has adopted a proposal which minimizes the burdens placed on small businesses. The proposal adopted by the Commission in this *Fifth MO&O* addresses, *inter alia*, frequency coordination in the Industrial/Business Pool. The new frequency coordination procedure, grounded, in part on comments representative of industry consensus, allows the applicants some choice in selecting a frequency coordinator, thereby introducing competition and reducing costs; but, in order to minimize potential interference, concurrence of another coordinator will be required in some instances. This *Fifth Memorandum Opinion and Order* also requires frequency coordinators to provide a consensus report to the Commission concerning standards for co-channel and adjacent channel interference. Although some initial burden thus rests on the coordinators in preparation of the report, the net effect will be to reduce the overall burden associated with the frequency coordination process inasmuch as there will likely be no significant further disputes among coordinators, with associated workload, concerning the appropriate standard to use when conducting an interference analysis. The burden associated with requesting or granting concurrence to certain coordinations is slight and the overall effect will be to facilitate the frequency coordination process, thus relieving some of the current burden associated with the occasional disputed frequency coordination.

**Report to Congress:** The Commission will send a copy of this *Fifth Memorandum Opinion and Order* including this Supplemental FRFA, in a report to be sent to Congress pursuant to the Small Business Regulatory Enforcement Fairness Act of 1996, *see* 5 U.S.C. § 801(a)(1)(A). In addition, the Commission will send a copy of the *Fifth Memorandum Opinion and Order*, including Supplemental FRFA, to the Chief Counsel for Advocacy of the Small Business Administration. A copy of the *Fifth Memorandum Opinion and Order* and Supplemental FRFA (or summaries thereof) will also be published in the Federal Register. *See* 5 U.S.C. § 604(b).

## APPENDIX B

## Final Rules

Part 90 of Chapter 1 of Title 47 of the Code of Federal Regulations is amended as follows:

**V. PART 90 – PRIVATE LAND MOBILE RADIO SERVICES**

1. The authority citation for Part 90 continues to read as follows:

**AUTHORITY: Secs. 4(i), 11, 303(g), 303(r) and 332(c)(7) of the Communications Act of 1934, as amended, 47 U.S.C. 154(i), 161, 303(g), 303(r), 332(c)(7).**

2. Section 90.35 is amended by deleting paragraph (b)(2)(ii), by adding the following new paragraphs (b)(2)(ii) and (b)(2)(iii) and by renumbering existing paragraph (b)(2)(iii) to read (b)(2)(iv). Section 90.175 is amended by removing paragraphs (b)(1), (2) and (3) and by adding new paragraphs (b)(1), (2) and (3) to read as follows:

**§ 90.35 Industrial/Business Pool**

\* \* \* \* \*

(b) \* \* \*

(2) \* \* \*

(i) \* \* \*

(ii) A letter symbol in the Coordinator column of the frequency table in paragraph (b)(3) of this section designates the mandatory certified frequency coordinator for the associated frequency in the table. However, any coordinator certified in the Industrial/Business Pool may coordinate applications on such frequencies provided the prior written consent of the designated coordinator is obtained. Frequencies for which two coordinators are listed may be coordinated by either of the listed coordinators.

(iii) Applications for new or modified facilities on frequencies shared prior to radio service consolidation by the former Manufacturers Radio Service, the Forest Products Radio Service, the Power Radio Service, the Petroleum Radio Service, the Motor Carrier Radio Service, the Railroad Radio Service and the Automobile Emergency Radio Service may be coordinated by any certified Industrial/Business Pool coordinator. However, in the event that the interference contour of a proposed station would overlap the service contour of an existing station licensed on one of these previously shared frequencies, the written concurrence of the coordinator associated with the industry for which the existing station license was issued, or the written concurrence of the licensee of the existing station, shall be obtained. For the purposes of this Section 90.35, the service contour for UHF stations is the 39 dBu contour; and the interference contour for UHF stations is the 21 dBu contour; the service contour for VHF stations is the 37 dBu contour; and the interference contour for VHF stations is the 19 dBu contour.

(iv) The letter symbols listed in the Coordinator column of the frequency table in paragraph b(3) of this section refer to specific frequency coordinators as follows:

IP – Petroleum Coordinator

IW – Power Coordinator

LR – Railroad Coordinator

LA – Automobile Emergency Coordinator

\* \* \* \* \*

**§ 90.175 Frequency Coordination Requirements**

\* \* \* \* \*

(b) *For frequencies between 25 and 470 MHz:*

(1) A statement is required from the applicable frequency coordinator as specified in §§ 90.20(c)(2) and 90.35(b) recommending the most appropriate frequency. In addition, if the interference contour of a proposed station would overlap the service contour of a station on a frequency formerly shared prior to radio service consolidation by licensees in the Manufacturers Radio Service, the Forest Products Radio Service, the Power Radio Service, the Petroleum Radio Service, the Motor Carrier Radio Service, the Railroad Radio Service or the Automobile Emergency Radio Service, the written concurrence of the coordinator for the industry-specific service, or the written concurrence of the licensee itself, must be obtained. Requests for concurrence must be responded to within 20 days of receipt of the request. The written request for concurrence shall advise the receiving party of the maximum 20 day response period. The coordinator's recommendation may include comments on technical factors such as power, antenna height and gain, terrain and other factors which may serve to minimize potential interference. In addition:

(2) On frequencies designated for coordination or concurrence by a specific frequency coordinator as specified in §§ 90.20(c)(3) and 90.35(b), the applicable frequency coordinator shall provide a written supporting statement in instances in which coordination or concurrence is denied. The supporting statement shall contain sufficient detail to permit discernment of the technical basis for the denial of concurrence. Concurrence may be denied only when a grant of the underlying application would have a demonstrable, material, adverse effect on safety.

(3) In instances in which a frequency coordinator determines that an applicant's requested frequency or the most appropriate frequency is one designated for coordination or concurrence by a specific frequency coordinator as specified in §§ 90.20(c)(3) or 90.35(b), that frequency coordinator may forward the application directly to the appropriate frequency coordinator. A frequency coordinator may only forward an application as specified above if consent is received from the applicant.